**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960



Date: January 23, 2009

Dr. Gregory J. Thorpe, Ph.D.
Manager, Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

SUBJECT: EPA Supplemental Comments and Questions
Supplemental Draft Environmental Impact Statement for A-9 B/C
US 74 Relocation, Graham County

Dear Dr. Thorpe:

The U.S. Environmental Protection Agency Region 4 (EPA) is offering supplemental comments and questions following a January 13, 2009, informational meeting between Federal Highway Administration (FHWA), North Carolina Department of Transportation (NCDOT) and Mr. Militscher of my staff. EPA appreciates the updated history provided for the A-9 project and we recognize that this project has a long 'NEPA history' and legislative mandate.

EPA has also reviewed the meeting minutes that were provided by Ms. Stacy Oberhausen of your staff. We offer a number of follow-up comments and questions concerning some of the issues that were discussed (Please see Attachment A1).

EPA's formal review comments on the Supplemental Draft Environmental Impact Statement (DEIS) dated October 14, 2008, remain unchanged. We continue to have significant environmental concerns regarding the justification for the purpose and need and for the one detailed study alternative (i.e., The "X" Corridor Alternatives). EPA is not prepared at this time to concur on a Concurrence Point 3, LEDPA for the A-9 B/C segments until our issues are more fully addressed.

EPA plans to continue to work with FHWA, NCDOT and other Merger team agencies on this Merger pipeline project, including the incorporation of context sensitive designs. If you have any questions, please feel free to contact Christopher Militscher of my staff at 919-856-4206 or by e-mail at militscher.chris@epa.gov.

Sincerely,

Heinz J. Mueller
Chief, NEPA Program Office
Office of Policy and Management

Cc: J. Sullivan, FHWA-NC
K. Jolly, USACE -Wilmington District
B. Cole, USFWS – Asheville
B. Wrenn, NCDWQ
C. Cox, NCWRC

**Attachment A1**
**Supplemental Comments and Questions**
**TIP Project No.: A-9 B/C**
**US 74 Relocation, Graham County**

Purpose and Need

EPA understands that FHWA and NCDOT will provide a copy of the Indirect and Cumulative Effects (ICE) report for further evaluation. EPA will provide future detailed comments after reviewing this report.

EPA believes that since the completion of A-9 Segment D (i.e., Widening to 4-lanes along NC 28 in Swain County to east of Stecoah Gap) and FHWA and NCDOT's experience with other ADHS Corridors (e.g., Corridors A & B), additional documentation of sustainable economic development can now be potentially provided. EPA has started examining detailed demographic information for Graham County and other western NC rural counties and will incorporate these comments after review of the ICE.

EPA believes that most manufacturing and 'heavy industries' (e.g., Chemical/pharmaceutical production, mining, fossil fuel energy production, pulp and paper mills, etc.), prefer not only access to 4-lane roadways, but also rail lines. Rail lines exist along the US 74 corridor but not near the project study area around Robbinsville and Stecoah Gap.

Does NCDOT plan future expansion of rail services in the project study area to support the anticipated industrial development?
Does the lack of existing rail service limit the types of manufacturing and industrial sector opportunities in the project study area?
Are there other vital infrastructure needs (i.e., Water supply, wastewater treatment, electric transmission and other utilities) that is planned by local interests?
What are the environmental impacts associated with expanded or new industrial and manufacturing development that is anticipated by FHWA, NCDOT and local officials?

Alternatives Analysis and the Proposed Tunnel at Stecoah Gap

EPA fully understands the reasons and history behind the decision to relocate US 74 away from Nantahala Gorge and the Nantahala River. EPA further understands the potential environmental reasons for not traversing the Stecoah Gap and Appalachian Trail area with a 4-lane divided facility. However, EPA continues to have significant environmental concerns regarding the construction of a 2,980-foot dual tunnel through Stecoah Gap. Many of the concerns are highlighted in EPA's October 14, 2008, letter on the Supplemental DEIS.

EPA does not believe that one 'new' issue regarding the proposed tunnel has been entirely examined. Most tunnels authorities have USDOT restrictions (49 CFR Parts

171-177, 397) on the transport of hazardous materials through tunnels. US 74 is one of only two east-west transportation corridors in rural western N.C. (US 64 being the other).

Long tunnels are 'inherently' confining spaces and NCDOT incorporated some information the in Supplemental DEIS regarding '24/7' personnel and equipment that would be present for typical operation and maintenance activities. One of the purposes of the US 74 Relocation project is to re-route truck traffic onto to a safer, 4-lane Strategic Highway facility. EPA has reviewed various sources and found that the restrictions on shipping hazardous materials can be profound on the overall transportation network. For example, the Chesapeake Bay Bridge-Tunnel District forbids the transport of <u>any quantity</u> of the following hazardous materials:

Explosives, Divisions 1.1, 1.2, and 1.3
Poison Gas, Division 2.3
Dangerous When Wet, Division 4.3
Poison, Inhalation Hazard Only, Division 6.1

Additional hazardous material Classes/Divisions are restricted by quantity:

Flammable Gas, Division 2.1 (Not to exceed 120 gallons in 6 gallon containers)
Flammable Liquid, Division 3 (Not to exceed 120 gallons in 6 gallon containers)
Flammable Solid, Division 4.1 (Not to exceed 900 pounds)
Spontaneously Combustible, Division 4.2 (Not to exceed 900 pounds)
Oxidizer, Division 5.1 (Not to exceed 120 gallons in 6 gallon containers or 900 pounds)
Organic Peroxide, Division 5.2 (Not to exceed 120 gallons in 6 gallon containers or 900 pounds)
Radioactive Materials, Division 7 (Not to exceed 300 curies or 500 pounds)
Corrosive Materials, Division 8 (Not to exceed 120 gallons in 60 gallon containers or 900 pounds).
Miscellaneous Hazardous Materials, Division 9 (Varies depending upon type/amount)

As can be seen from this one example, most experienced tunnel authorities have very strict requirements for the shipment of hazardous materials through tunnels. As NCDOT is aware, most gasoline is shipped in MC 302 tanker trucks to local service stations and bulk storage/distribution facilities. These large volume tanker trucks are prohibited in other states from transporting through tunnels and are required to take pre-designated, often times circuitous routes. Because there are no rail lines or direct oil pipelines in the Robbinsville area, EPA requests FHWA and NCDOT to consider the following questions:

Do FHWA and NCDOT envision placing similar hazardous material restrictions through the future Stecoah Gap tunnel?
Do FHWA and NCDOT plan to 'exempt' certain Divisions of hazardous materials or types of bulk containers?

If FHWA and NCDOT plan to be consistent with other experienced tunnel authorities, would these restrictions require the potential circuitous re-routing of gasoline and other fuel delivery tanker trucks to Robbinsville?
Would this re-routing be expected to have an economic impact to the project study area?
What other manufacturing, commercial or industry sector entities that use or ship hazardous materials would be affected by these types of prohibitions and restrictions?
If existing US 74 remains as the primary transportation corridor for hazardous materials after the new US 74 Relocated B/C segments are completed, do FHWA and NCDOT have plans to evaluate the economic development and transportation safety effects from this condition?
What percentage the of truck traffic carry hazardous materials along existing US 74?

Another aspect of transporting hazardous materials through a tunnel is the potential for emergency response by OSHA qualified, trained personnel (29 CFR Part 1910.120). Most rural volunteer fire departments lack the training and equipment to respond to hazardous material emergencies. The costs for the training of the personnel and the equipment and its maintenance that is necessary to conduct proper and safe responses in confining spaces can be 'tremendous'. NCDOT division maintenance personnel are not required to possess this training or equipment. Even 'simple' fire and rescue activities not involving bulk hazardous material incidents in a tunnel can be very dangerous and complex response operations. A 'small' car fire can create potentially lethal conditions in a tunnel. Even trained Emergency Medical Services (EMS) persons are reluctant to enter a confining space without hazardous material support agencies present? Regional, State and Federal response assets are hours and days away for a geographically isolated, mountainous area.

What plans do FHWA and NCDOT contemplate developing to address the long-term training and equipment needs for the proposed tunnel?
Do FHWA and NCDOT have estimated costs for the long-term (e.g., 30-year) 'general' operation and maintenance of the tunnel (Exclusive of hazardous material response issues)?
What are the local and regional response capabilities in terms of trained personnel and equipment?
Do FHWA and NCDOT contemplate the development of a NCDOT Tunnel Contingency Plan in the event that a particular hazardous material incident overwhelms local or regional response capabilities?

EPA has additional questions regarding the waste disposal plans for the construction of the tunnel but will reserve those questions until NCDOT provides additional information on the 'cut and fill' and waste disposal site analysis that was done for the project.

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**TDOT Corridor K Concurrence Point 2 (Supplement)**

**EPA's Rational for Non-concurrence**

**July 25, 2012**

Although EPA is non-concurring with this concurrence point, EPA thinks that this non-concurrence will lead to better communication and more effective problem solving. EPA also appreciates the opportunity through TESA to problem solve and work collaboratively with TDOT to come to resolution of the issues described below. As stated in TESA, "The goal of the issue resolution process is to resolve technical and/or policy issues at the lowest possible staff level. But, if this is not possible, it is desired that the issue resolution process be invoked as soon as possible so that differences of opinion are not allowed to become divisive or polarizing. (TESA, Section 6.3 Issue Resolution Process)." The drafters of TESA envisioned a need to evoke issue resolution as a productive means to avoid future insurmountable conflict. TESA further intended the issue resolution process to be triggered early in the TESA and NEPA process so as to encourage early resolution of issues that avoid show stoppers late in the NEPA process. EPA is hopeful that the issues outlined below will be resolved through collaborative interagency problem solving means.

**1. Different Methodology for Developing Alternative 9:**

Although EPA doesn't specifically have concerns with adding Alternative 9 for consideration in the alternatives analysis, the analysis used to select Alternative 9 as a viable alternative is a concern of EPA. EPA is concerned that Quantum did not identify Alternative 9 as a viable alternative during the first screening analysis. It is our understanding that Quantum uses pre-determined GIS parameters to display potential alignments that have the least impacts to environmentally sensitive areas. EPA recommends that the alternative analysis not be solely dependent on Quantum, but include a balanced approach that would include ground truthing as a quality control measure. We are also concerned that Alternative 9 was developed using different methodologies from the other alternatives. The methodology used to establish Alternative 9 should be the same as the methodology used to evaluate all alternatives.

**2. Methodologies:** EPA continues to have significant concerns relating to the methodologies for determination of the preferred alternative and mitigation plans. Concurrence Point 2, as described in TESA, not only requires Agencies to concur with the alternatives to be evaluated,

but also requires Agencies to concur with the "refined scopes and methodologies to be used and the level of detail required in the analysis of each alternative." (TESA, section 5.10, page 12) EPA continues (in concurrence comments, in interagency meetings and most recently in our comment letter regarding the Golder Report dated April 19, 2012) to express our concerns regarding TDOT's use of different methodologies when determining each alternative's impacts associated with acid producing rock and related water quality issues. EPA has expressed concerns related to the irreversible and chronic impacts associated with Acid Producing Rock (APR). To date, these concerns have not been formally addressed. In order to proceed with the process in a timely manner, we request a response to our comments regarding the concerns relating to the Golder Report as outlined in the EPA's comment letter.

**3. Water Quality:** EPA has provided TDOT with documentation demonstrating the potential for chronic discharges from the site that might have a high potential of impacting water quality standards for these high value stream and other water resources within the watershed. As outlined in our Concurrence Point 2 comments (dated March 17, 2011), EPA remains concerned regarding the project's impact to water quality, the elimination of spot improvements from the suite of alternatives, TDOT's lack of commitment to be consistent with the USFS Land Management Plan, and lack of commitment to adopt the water quality sampling plan that was developed by TDEC. EPA concurred with Concurrence Point 2 because at the time EPA was optimistic that TDOT would consider recommendations requested by EPA and other state and federal regulatory agencies through the Aquatic Resources Team (ART) and the Geotechnical Advisory Team (GAT). Specifically, we recommend that TDOT commit to the water quality sampling plan developed by TDEC. Additionally, TDOT has relied solely on the Golder Report as the only viable means to handle APR. As previously stated, EPA thinks the Golder Report is a good foundation for methodologies to avoid and mitigate for APR, but a more comprehensive, robust and innovative technologies and methodologies should be utilized to ensure the pristine streams of the Ocoee basin are not degraded.

**4. Design Speed:** In EPA's earlier concurrence point 2 advisory comments, EPA questioned the need to have the 50 mph design speed as a limiting factor for various alternatives (EPA Advisory Comments, March 18, 2011, page 2). It is unclear that the proposed 50 mph design speed is required to receive ARC funding. EPA also questioned the use of this design speed to eliminate spot improvements from the suite of alternatives. EPA continues to remain concerned that the elimination of spot improvements will limit TDOT's ability to select the most environmentally practicable alternative. Upon further consideration and for disclosure purposes, EPA requests that TDOT consider lower design speeds while conducting the alternative analysis.

**5. Improving Existing Alternative:** EPA understands that TDOT plans to use the "worse case scenario" for use in the conceptual footprint of the "Improving Existing" Alternative 2. EPA is concerned about the potential impact this might have on the alternatives analysis and how this could possibly skew the alternatives comparisons. EPA agrees with the USFS that a more

flexible and environmentally friendly "Improving Existing" alternative could be developed especially if TDOT adopts a more realistic design speed below 50 mph.

**6. Communication Issues:** EPA is hopeful for improved communications between TDOT and resource agencies. ART and GAT meetings now have "core" teams and until recently not all resource agencies were invited to attend those meetings. Additionally, there is a design team that EPA has never been invited to participate. Short meeting notices and meetings requiring overnight stays, limit EPA's ability to participate. To ensure better EPA and resource agency participation, we request the use of VTC or web-based technologies be utilized for future interagency meetings. The cancellation of the April 26th meeting with the resource agencies was a missed opportunity for productive problem solving toward the goal of producing a more environmentally acceptable project. To keep resource agencies abreast of the latest changes, EPA requests that TDOT sponsor routine (perhaps bi-weekly) conference calls or VTCs to inform resource agencies of the latest developments.

**7. Collaboration:** Section 4.3 Interagency Consultation (TESA) encourages the agencies to work collaboratively with TDOT. The collaborative process is a process where each agency's position on an issue is presented and discussed to provide for a final product that all agencies agree with, and that advances the goals of the project. TESA provides for this through the use of concurrence points. Section 6.3 Issue Resolution Process, in TESA states, "The goal of the issue resolution process is to resolve technical and/or policy issues at the lowest level." EPA agrees with this point and requests that all Agency positions be evaluated in sufficient depth such that TDOT can demonstrate a logical methodology for their position. The collaborative process provides for an atmosphere where technical issues can be identified and evaluated through constructive engagement providing for consensus building for all TESA members. EPA requests that the TESA team should strive to make future interagency meetings more collaborative and focused on problem solving.

As stated above, EPA NON-CONCURS with the proposed Concurrence Point 2 and request that TDOT re-visit the full Concurrence Point 2 to seek participating and resource agency consensus regarding methodologies for alternative analysis.

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October 14, 2008

Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Subject: US 74 Relocation, from US 129 in Robbinsville to NC 28 in Stecoah, Graham County
Draft Supplemental Final EIS; TIP No.: A-9 B & C
CEQ No.: 20080326; FHW-E40165-NC

Dear Dr. Thorpe:

The U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the subject document and is commenting in accordance with Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA). The North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) are proposing to relocate US 74 from US 129 in Robbinsville to NC 28 in Stecoah in Graham County for an approximate distance of 10 miles. The proposed multi-lane, median divided facility will potentially involve the construction of a 2,870-foot tunnel beneath the Appalachian Trail at Stecoah Gap. This project has been in the NEPA/Section 404 Merger process. According to EPA's records, the only Merger 01 process concurrence point was CP 2A, Bridging and Alignment Review that the team concurred upon on August 14, 2007. Purpose and need for the proposed project as well as detailed study alternatives were apparently addressed in year 2000 prior to the implementation of the NEPA/Section 404 Merger 01 process.

The NCDOT and FHWA issued a FEIS for the entire A-9 project in 1984. The project was segmented by NCDOT and FHWA into four (4) parts in 1998. Construction of the eastern widening of the 'D' Section was recently completed between Stecoah and Almond. The 'A' Section of the project between Robbinsville and Andrews is not included in this Draft Supplemental FEIS. The 'A' Section would be entirely on new location that also would potentially include tunneling through the Snowbird Mountains at Tatham Gap. The 'A' Section is mostly located within the Nantahala National Forest and Game Lands and is proposed to be studied under another NEPA document. The project study area for the B and C Sections is also very rural and includes impacts to the

Nantahala National Forest at Stecoah Gap. The proposed tunnel at Stecoah Gap would be located underneath the Appalachian Trial. EPA's specific comments are attached to this letter (See Attachment A).

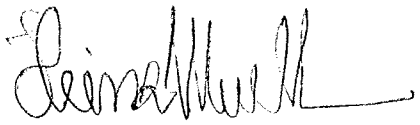
In summary, EPA believes that the impacts to high quality streams and wetlands, air quality, and the human environmental are of such a magnitude that further avoidance and minimization efforts to the recommended Alternative YX would not substantially reduce the magnitude or severity of the impacts. EPA also considered the potential for viable stream and wetland compensatory mitigation within the project study area. The mitigation plans identified in the SDFEIS are not adequate to compensate for the impacts to jurisdictional waters of the U.S. EPA has conferred with other resource and permitting agencies and the potential to provide compensatory mitigation within this watershed does not appear to be reasonable or feasible. EPA's review of the SDFEIS has identified major adverse environmental impacts to public health, welfare and the environmental quality of the project study area. EPA intends to work with the lead transportation agencies to reduce these impacts. EPA believes that there are other alternatives that require further examination by NCDOT and FHWA, including Transportation Systems Management (TSM). EPA does not believe that the SDFEIS adequately assesses the significant environmental impacts of the action, including the 'missing' "A" Segment.

EPA recommends that the lead transportation agencies work with local community officials to determine a sustainable economic development alternative that comprehensively addresses mobility, system linkage and safety. EPA believes that the exclusion of the direct human and natural resource environmental impacts from the "A" segment of the K Corridor is not adequate for the purposes of compliance with NEPA. EPA has rated Alternatives X and YX as 'EO-2', Environmentally Objections with additional information being requested for the final document. Specifically, additional information should be provided on the construction and waste generation impacts and the primary purpose of the project for economic development as well as the project and environmental issues raised in the attached detailed comments.

EPA recommends that the A-9 project, including Segments A, B and C, be placed in the NEPA/Section 404 Merger 01 Process at Concurrence Point 1 to help develop a substantiated purpose and need and to better define the project study area. This effort should focus not only on the existing US 74 corridor, but other roadway connections such as US 129, NC 143, and NC 28. Without an improved roadway connection to US 74 in Andrews, N.C., the current proposal does not meet the original intent of the ADHS requirements. The project should be comprehensively redefined in the context of improving the mobility, system linkage and safety of all the project study area roadways and providing sustainable economic development in the region. Additional design alternatives on these existing roadways should consider potential multi-lane facilities at specific locations and that incorporate context sensitive design solutions to avoid and minimize human and natural resource impacts.

Should you have any questions about EPA's comments, please contact Mr. Christopher Militscher on my staff at (919) 856-4206 or by e-mail at: militscher.chris@epa.gov.

Sincerely,



Heinz J. Mueller
Chief, NEPA Program Office
Office of Policy and Management

Cc: K. Jolly, USACE Wilmington District
J. Sullivan, FHWA-NC
B. Cole, USFWS-Asheville
B. Wrenn, NCDENR-DWQ
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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
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April 7, 2009



Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
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Raleigh, North Carolina 27699-1548

Subject: US 74 Relocation, Graham County
TIP# A-9 B/C
Indirect and Cumulative Effects Assessment Report, July 2006

Dear Dr. Thorpe:

The U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the subject document and we are commenting as part of our review of the 2008 Draft Supplemental Final Environmental Impact Statement (DSFEIS). These comments are consistent with Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA).

The North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) provided EPA with a copy of the July of 2006 Indirect and Cumulative Effects (ICE) Assessment report following our October 14, 2008, comments on the SDFEIS and January 13, 2009, agency coordination meeting.

EPA's specific technical review comments and questions on the ICE report are detailed in the attachment to this letter (See Attachment "A").

In summary, the report does not fully evaluate indirect and cumulative impacts resulting from the A-9 B/C project. Much of the information in the report was previously provided in the SDFEIS. According to this assessment, all potential indirect and cumulative impacts resulting from the proposed 10-mile new location expressway are the responsibility of the local governments or the U.S. Forest Service. EPA is not prepared at this time to concur on the Least Environmentally Damaging Practicable Alternative ('LEDPA'), unless FHWA and NCDOT are proposing the 'No Action' alternative evaluated in the SDFEIS as the preferred alternative. EPA requests that NCDOT and

FHWA consider investigating how and why the original US 64 Corridor K was potentially redefined or redrawn to the US 74 corridor between Murphy and Sylva, N.C. EPA recommends that NCDOT, FHWA and other Merger team agencies also evaluate potential alternatives that incorporate context appropriate designs and comprehensive transportation planning concepts. Updated studies and demographic information sources should also be utilized for future A-9 B/C studies. Should you have any questions about EPA's comments, please contact Mr. Christopher Militscher on my staff at (919) 856-4206 or by e-mail at: militscher.chris@epa.gov.

Sincerely,

Christopher A. Militscher, REM, CHMM
Environmental Scientist

FOR:
Heinz J. Mueller
Chief, NEPA Program Office
Office of Policy and Management

Cc: K. Jolly, USACE Wilmington District
J. Sullivan, FHWA-NC
B. Cole, USFWS-Asheville
B. Wrenn, NCDENR-DWQ

ATTACHMENT A
ICE Assessment Report for TIP# A-9 B/C
Graham County

EPA's Detailed Comments:

General Scope of ICE Assessment

EPA notes that the ICE Assessment report was prepared not only for the A-9 B/C segments of the proposed project, but also included the 'A' segment in the analysis (Page S-1). The 2008 Draft Supplemental Final Environmental Impact Statement (SDFEIS) did not include the detailed study alternatives for the 'A' segment or the potential direct impacts associated with this longer portion of the overall A-9 project. It is not believed to be reasonable to evaluate the indirect and cumulative effects (including adverse impacts to the human and natural environment) of a portion of the project without identifying the direct impacts. Without the understanding that the 'A' segment will ever be funded, permitted and built, the ICE Assessment should have focused on the anticipated indirect and cumulative effects to the B/C segments of the project. The ICE Assessment includes the potential benefits from the completed 'A' segment between Robbinsville and Andrews, but not the adverse human and natural resource impacts. Because the 'D' segment is constructed or nearly constructed and its direct effects previously evaluated, it was not unreasonable to include the 'D' segment in the ICE Assessment. The indirect and cumulative impacts for the 'D' segment were not fully analyzed in the ICE Assessment report.

One of the most difficult tasks of performing an ICE analysis of this type is the unique characteristic of the project study area and within Graham, Swain and Cherokee Counties. As cited on Page 1-9 of the ICE, approximately 64% of Graham County is part of the Nantahala National Forest. Cherokee and Swain counties also have very high Federal land ownership percentages. Tribal lands of the Eastern Band of the Cherokee Indians also represent a substantial portion of the land ownership and use in these rural western counties. It is not reasonable in EPA's opinion to accurately and fairly compare these specific counties' socio-economic conditions and other demographic trends with other NC counties that do not have the same land ownership characteristics.

EPA would believe that northeastern counties in Georgia that are included within the Chattahoochee National Forest, eastern counties in Tennessee that are included within Cherokee National Forest and/or western counties in South Carolina that are included in Sumter National Forest would be better used for comparison ICE study purposes for the A-9 B/C segments. These other sparsely populated, mountainous, rural areas all have high Federal and State land ownership percentages like Graham County.

Currently, the ADHS is authorized at 3,090 miles (4,970 kilometers - km), including 65 miles (105 km) added in January 2004 by Public Law 108-199. By the end of FY 2004, 2,627 miles—approximately 85 percent of the 3,090 miles (4,970 km)

authorized—were complete or under construction. According to the ADHS website, many of the remaining miles will be among the most expensive to build. EPA also believes that the remaining corridor segments have potentially the greatest environmental harm with the least 'cost/benefit'. With all of these completed miles as examples for FHWA and NCDOT, the general indirect and cumulative effects associated with the B/C segments should be readily available (Citing: *June 5, 2008, ARC-Commissioned Study Underscores Economic Benefits of the Appalachian Development Highway System*). NCDOT used the ARC 1998 Appalachian Development Highways Economic Impact Studies (Pages 2-2, 2-3, etc.) that is now more than a decade old. Examples from this more recent study should be considered in revising and updating this ICE Assessment report. Segment D should also be utilized as a 'baseline' for the B/C Segments. If there are specific examples of economic development improvements resulting from the D Segment, a revised ICE Assessment should fully address these examples and how they might or might not be applicable for the new location B/C Segments.

There are numerous assumptions made in the ICE assessment for the 'B & C Scenario' that are not currently valid for the Graham County area. Under item #1, jobs and companies that supply building materials, EPA does not believe that this economic benefit is fully sustainable. Regardless of the recent National housing and mortgage crisis, Graham County has a 'finite' amount of 'build-able' private lands. Many private land areas are also small farms which local residents depend upon for certain local market needs. Without local land use capabilities and zoning ordinances, there are no formal plans in Graham County to address sustainable business activities that might result from an improved section of road. The attraction for retired persons to move to rural Graham County is believed in part to 'get away' from suburban subdivisions and congested urban areas. The extreme mountainous terrain is also not conducive to an 'infinite', sustainable, seasonal housing market. Supporting residential housing infrastructure is lacking. Severe environmental limitations of water supply and wastewater treatment will hamper a continued economic growth sector of new housing development. Looking at recent real estate listings for north Georgia, eastern Tennessee and western N.C., EPA found that one of the prime incentives for many of these 'get-away' type of seasonal or retirement residential homes is that they border or adjoin U.S. Forest Service or other public lands. Prices can be 20-40% higher for comparable homes that border Federal and other lands that will stay permanently 'undeveloped'.

Under item #2, EPA has concerns that the assumption is that increasing vehicle miles traveled for commuting purposes is a 'positive thing' in order to reduce travel times to employment centers outside of the project study area and preventing the outward migration of working-age citizens. EPA believes that increasing vehicle miles of travel (whether on a two-lane roadway or 4-lane roadway) is not fuel and energy efficient nor an economically sustainable activity. The underlying socio-economic cause for the outward migration of working-age persons in Graham County has not been fully examined in the report.

Under Item #3 on Page 2-4, EPA disagrees with the statement that 'improved accessibility of the area would also further the area's attractiveness as a tourism destination'. There is no specific study or documentation to support this statement. Similarly, the premise suggested in Item #4 is also conjecture and not based on studies or documentation. Again, the assumption that 'increased development could spur growth in service-based businesses such as retail, hotels, restaurants, and medical facilities' is not a project-specific analysis of what will reasonably happen in the project study area once an existing two-lane route is essentially converted to a new location 4-lane divided route for approximately 10 miles. As previously cited from EPA's review of the SDFEIS, the new B/C Segment will 'dead-end' at a 2-lane roadway (i.e., U.S. 129).

Under Item #5 on Page 2-5, EPA believes that the assumption concerning increased government services and a growth in public sector or community-based employment is not necessarily an economic benefit. In other rural areas in the Appalachians where there has been 'artificial residential growth increases', most small communities cannot provide increased public services without significant increases in property taxes or other local taxes. With such a high proportion of the county on 'retirement fixed incomes' these tax increases could be adverse economic impacts to the entire project study area. Higher commercial property taxes discourage new businesses and can over-burden existing local businesses potentially forcing more job lay-offs and/or business closures.

As previously stated, EPA does not believe that the 'A, B, & C Scenario' provided in the ICE Assessment is reasonable or foreseeable. The approximate 11-mile new location 'A segment' through the Snowbird Mountains and a major portion through the Nantahala National Forest was not evaluated in the SDFEIS and is an unfunded project. EPA understands that local governments have expressed an interest in fostering industrial and manufacturing sectors due to recent closings and layoffs in the project study area (Page 2-5). The ICE Assessment did not evaluate the potential causes for these manufacturing closures and layoffs. Because these businesses previously existed and expanded in the past with a 'two-lane roadway network', EPA cannot ascertain how the change of a two-lane system to a 4-lane divided system south of Robbinsville will substantially alter the business climate in Robbinsville. The ICE Assessment did not address the fundamental socio-economic question as to why these businesses relocated or 'down-sized'. EPA understands that building infrastructure is already available at several locations to support industrial and manufacturing employment. The ICE Assessment report does not provide details on the locations of the 'available parcels' with existing infrastructure that supports industrial and manufacturing employment. Where are these specific parcels and are they currently adjoining a 4-lane, divided route? There are potentially some local businesses that have not relocated or laid-off workers. The ICE Assessment should have addressed what positive socio-economic and market factors have allowed these existing businesses to remain in the Graham County.

EPA has some primary environmental concerns regarding the ADHS corridor selection, including the 'original' Corridor K. The benefits and some of the travel

demand assumptions were made decades ago without a full appreciation of the development patterns and land use issues that are recognized today. For example, the US 19/74/129 route (Corridor K) begins near east of Waynesville at the same location as the US 23/74/441/64 route. West of Sylva, US 74 splits northwesterly towards US 19. US 23/441 split west of Franklin and US 64 continues westerly to Murphy where US 19/74/129 joins US 64 and becomes US 64/74. Essentially, these routes have the same eastern and western termini. However, there are many more miles of multi-lane improvements to the US 23/74/441/64 route than with the 'more northerly and parallel' US 19/74/129 route. According to the 'Wikipedia' definition for Corridor K, it is the US Highway 64 route (Not US 74), although the 1966 map from the ADHS shows it along the US 74 route in North Carolina. For regional traffic issues within the entire ADHS, EPA does not agree that the northerly US 19/74/129 route offers any advantages or benefits compared to the US 64 route between Nashville, Tennessee and Asheville, North Carolina. According to the NCDOT state transportation map, the longest primary route in North Carolina is US 64 from the Tennessee state line to the Outer Banks for a distance of 611 miles through 24 counties. More segments of the US 64/23/441 route have been improved to 4-lane than US 74 between Murphy, NC and Sylva, NC. There have been numerous Transportation Improvement Program (TIP) projects associated with the improvements of US 64 to 4-lanes through Cherokee, Clay, Macon and Jackson counties. Is there a demonstrated traffic need from an Interstate commercial perspective to have two improved western NC routes? Did FHWA and NCDOT fully consider relocating the "K Corridor" to US 64/23/441 route after the 1984 issuance of the FEIS?

EPA could not identify the specific traffic data that includes the current percent of truck traffic on existing US 74 or on the US 64 corridor. There are no detailed estimates of how truck traffic percentages might change in western N.C. after completion of a B/C segment. According to FHWA expert testimony in North Carolina on Strategic Highway Corridors (Reference: *SHC Final Meeting Summary, 4/20/05, Mr. Martin Weiss, FHWA Team Leader, National Systems and Economic Development; Economic Development Impacts of Rural Corridor Improvement*), there are number of factors that need to be considered, including the removal of significant barriers, location, expansion in the employee/employer shed, highway improvement and expansion in educational facilities, etc. Several factors were mentioned that do not correlate well to rural development and SHC include competing nearby parallel corridors, low population density and access reduction on freeway facilities. For the B/C Segments, EPA believes that 2 out of the 3 factors that would not provide for economic development with a SHC in Graham County including a low population density (27 per square mile; 2007) and a parallel US 64 SHC. There are also a number of positive factors that needed to be considered for a SHC, including expansion of educational facilities. The ICE Assessment does not address any future local plans for expanded educational facilities, medical facilities, etc.

Demographics, Land Use and Development Trends

Table 1.5.1 lists occupational data for different sectors for Graham and Cherokee Counties and North Carolina state-wide. The source of this data is listed as NCEDIS,

December 2004. EPA has found more recent information including the following sources: http://www.stats.indiana.edu/uspr/a/usprofiles/37/us_over_sub_pr37075.html http://www2.fdic.gov/recon/ovrpt.asp and http://www.epodunk.com/cgi-bin/incomeCommute.php .

Some of the interesting statistics from these sources and reports include that Graham County has experienced Total Employment Growth (Not Seasonally Adjusted) at some of the highest growth rates in North Carolina over the last several years. For the year 2007, Graham County has shown a 15.4% total employment growth rate compared to just 1.4% for North Carolina in the same period (i.e., More than a 10-fold increase). Population growth since 1990 using 2007 data shows a 9.2% increase. Unemployment rates as shown in Table 1.5.2 of the ICE for Graham County are not consistent with some of the data EPA found at other sources and is not as current (2000-2004). EPA recognizes that this ICE was prepared and issued in 2006 and much of the data evaluated by NCDOT was more current up to that period.

EPA does recognize that Graham County has a proportional very high poverty rate (22.2% in 2007). It is also important to note the comparatively large portion of persons of retirement age that moved to Graham County and that they are typically on fixed incomes. With inflation factors and the percent of the Graham County workforce that are in 'traditionally low-paying jobs' (e.g., 13.6% in construction per Table 1.5.1 compared to 5.9% of the NC average), the higher poverty rate can be partly explained. Also, Native Americans represent 7.4% of the Graham County population compared to 1.6% State-wide (Table 1.5.7). Native Americans and other minority populations have historically been paid lower wages and have fewer advancement opportunities than the 'White racial group' (e.g., With 7.4% of the county population, Native American owned-businesses are just 0.9% for North Carolina: Source: http://quickfacts.census.gov/qfd/states)

EPA notes the information containing seasonal homes in Table 1.5.8 and on Pages 1-20 and 1-21. Graham County had an 'explosive' increase in seasonal homes between 1980 and 2000 (i.e., 2.57% in 1980 compared to 21.85% in 1990 and 26.55% in 2000). With the drastic downturn in late 2008 in the entire housing sector of the U.S. and the National mortgage and banking crisis, it is highly unlikely that this trend will continue through the planning years evaluated by NCDOT in the ICE Assessment.

Projected Growth

EPA notes that Exhibit 3.1.1, Projected Growth Areas for Graham County is identical to Exhibit 3.1.3. Similarly, Exhibit 3.1.1, Project Growth for Cherokee County is identical to Exhibit 3.1.4. EPA does not understand the reason for the duplication of the exhibits. For this section of the ICE, EPA does not understand the true difference between the "Primary, Secondary and Tertiary Growth Areas". Most of the projected growth areas in Graham County appear to follow existing roadways and valleys. EPA has concerns that Exhibit 3.1.1 'stopped' near the A-9 Segment D portion in Swain

County. EPA reiterates its previous statement that the improvements to Segment D should be used as a 'relative baseline' for what may happen for the B/C segments.

EPA has reviewed other transportation projects in the rural southern Appalachian mountains and notes that some of the long-term economic growth projections have not been realized in many areas despite having direct access to 4-lane, divided facilities. Again, there is a potentially false assumption that 'improved accessibility' in Graham County will result in increased growth in manufacturing and industrial sectors (Page 3-15). EPA also does not agree that improved accessibility (i.e., 2-lanes to 4-lanes divided for ten miles) will encourage primary growth in the form of tourism, seasonal home construction, and sustainable commercial development. There may be some very limited expansion of commercial development along the new facility, such as a few more convenient stores and possibly a hotel or two. Tourism and seasonal home construction may actually be negatively impacted following the completion of the new facility. What is being described in the ICE Assessment report as projected growth under the B & C Scenario is another potential form of rural development 'sprawl'. EPA has noted the existence of dozens of closed small businesses in western N.C. along existing 4-lane, divided routes. These closed businesses include restaurants, convenient stores, service stations and retail outlets. Considering these businesses have been closed indefinitely even during relatively 'good economic times' (i.e., 'Pre-2008 recession'), it is highly unlikely that these new businesses being 'projected' in the ICE Assessment will ever open or survive in the long-term regional economy.

EPA has review 2007 data from the *North Carolina's Office of State Budget and Management, including County Growth Map: Population Growth 2000-2007*. Graham County similar to other very rural mountainous counties is characterized as a "Low Growth, Net-in Migration", whereas numerous other counties that have 4-lane facilities are showing "Population Loss – Net Out-Migration". Some of these counties include Columbus (US 74/76), Burke (Interstate 40), Halifax (Interstate 95), Northampton (Interstate 95) and Martin (US 64). Obviously, there are other important socio-economic factors other than access to a 4-lane roadway that determine if an area is going to experience population growth or a general decline. The ICE Assessment did not provide a detailed examination of the socio-economic issues and why Graham County experienced substantial growth during the 2000-2007 period while other more developed counties in North Carolina with far greater roadway infrastructure in North Carolina experienced substantial decline during this same period. EPA notes the general table information in Appendix A, Table A.1, concerning 'Socio-Economic Conditions Inventory'. This is a good recognition of some of the general characteristics of local socio-economic factors, but addition discussions and analysis is needed to make this inventory more meaningful as it relates to specific indirect and cumulative effects of the A-9 B/C project.

In EPA's review of the Socio-Economic Conditions Inventory, it is noted that under 'education levels' that the project study area has above the State average high school diploma attainment but lower than the State average for college degree attainment. From EPA's review of Western NC statistics, there are no colleges or universities located

in Graham County. The Tri-County Community College is located in Murphy, Cherokee County and the Southwestern Community College (SWCC) has main campuses in Macon and Jackson counties with several small annexes. One SWCC annex is located near Bryson City, in Swain County (Reference source: http://main.nc.us/graham). One of the reasons that some of the younger sector of the population is 'moving out' of the Graham County area is potentially the lack of higher educational facilities. Without a college degree or job opportunities requiring advanced education, there may be little to no opportunity to move back to Graham County after completing their higher education elsewhere.

The Table A.1 inventory also cites under job growth rate that 'layoffs and closings in manufacturing sector'. The ICE Assessment report fails to evaluate the potential causes of these layoffs and closings and how a relocated 4-lane roadway would change this trend. Similarly, the report does not include a detailed analysis as to how a relocated 4-lane roadway would increase tourism. Under social conditions, the table states that the community is '*somewhat polarized between the need for economic development and desire for area to remain the same*'. EPA does not understand how the conversion of approximately 10 miles of existing 2-lane roadway to a 4-lane divided roadway meets the 'economic development' need expressed by some of the local community.

Under Table A.2, Notable Features Checklist, EPA notes that under rare, threatened, or endangered species and associated habitat, there are no species listed. In the SDFEIS, there is a project commitment concerning project timing and the Indiana Bat (*Myotis sodalist*). Section 3.2.4 of the ICE is devoted to the discussion of 5 Federally Protected Species, including several "Not Likely to Adversely Affect" conclusions. EPA does not understand how this table matches up with Section 3.2.4. This section also does not address any potential Migratory Bird Treaty Act (MBTA) requirements. In Table A.2, EPA is unfamiliar with the term "materialists" under 'Communities with vulnerable keystone predators and materialists'. The term "materialist" is undefined in the report. Under Socio-Economic Features, EPA does not agree with the assessment that [all] medical services require travel out of the area (See http://main.nc.us/graham/healthcare). The Tallulah Health Center is located on Highway US 129 South and the Graham Health Department is located on Main Street in Robbinsville. Obviously, Graham County lacks a regional medical center or large hospital and those medical conditions requiring these services would need to travel to Asheville or other large urban areas. However, this same situation can found for 40% or more of the counties in North Carolina. There may be a need for expanded health care facilities in Graham County. The ICE Assessment did not fully evaluate this potential socio-economic need.

Table 3.1.1 provides population projects under the No-build Scenario, B & C Scenario and the A, B, & C Scenario for Graham and Cherokee Counties. The percent change for Graham County between the No-Build and B & C Scenario is not believed to be significant (i.e., 6.1% to 7.5% 2010-2020 and 4.4% to 5.9% 2020-2030). Even the projections for the A, B & C Scenario for Graham County are not that substantial (i.e., 6.1% to 8.3% 2010-2020 and 4.4% to 6.7%). Just as a relative example, the direct impact

from the 'Alternative YX' includes 38 residential relocations. With an average household of 2.5, there would be 95 persons in Graham County that would need to be relocated. That represents a 'direct potential population loss' of approximately 1.2% of the 2007 Graham County population. Again, EPA does not concur with the statements contained on Pages 3-4 and 3-5 of the ICE concerning population growth and increased opportunity for tourism.

Without the proposed project, population in Graham County is expected to increase from 7,993 (2000) to 9,614 (2030). These reasonable increases allow local officials to plan for increased demand on local public services. Large increases in population over a relatively short time frame can significantly harm the local (and State) Government's ability to plan and provide necessary services, such as schools. There are countless examples in North Carolina where explosive population growth in certain areas (e.g., Wake County, Durham County, Johnston County, Guilford County, Mecklenburg County, etc.) has put a huge demand and burden on both local and State agencies to provide adequate schools, public safety, water supplies and other needed services. Page 3-17 of the ICE Assessment acknowledges this fact: "*....local municipalities would need to greatly increase service capabilities*". The ICE Assessment does not say how the local governments are going to meet these increased demands (e.g., Higher property taxes?). Page 4-2 of the ICE Assessment states: "*With the county's high unemployment rate and low per capita income, a tax increase is simply not feasible*". FHWA and NCDOT have not provided a potential remedy to this potentially drastic indirect and cumulative impact to the local community. The items discussed in Section 4.2.1., such as Infill, Low-Impact and Cluster Development and Brownfields Redevelopment are all generally good planning concepts. Page 4-6 states, "*With careful planning, local governments can slow down or foster development by the strategic placement of water, sewer and utility lines*". Graham County lacks not only local land use planning capabilities, but zoning requirements as well. The ICE does not address how local governments will obtain the funding and resources needed to obtain comprehensive local land use planning and zoning tools. The ICE Assessment provides a number of positive recommendations for local government, but does not realistically address how they are to obtain the resources and capabilities for implementing these 'good ideas'. The ICE Assessment also seems to separate the need to develop a comprehensive transportation plan for the project study area with the 'claimed economic benefits' of a new 4-lane B/C Segment.

Land Use Planning

EPA acknowledges the statement provided in Section 4.2 of the ICE Assessment concerning the lack of land use planning and zoning in Graham County. EPA does not agree with the statement provided on Page 4-2 concerning the U.S. Forest Service lack of contribution to the County's revenue. According to one report reviewed by EPA from the U.S. Forest Service, timber sales on the National forests contribute hundreds of thousands of dollars each year to Graham County and other nearby counties. FHWA and NCDOT should consult with the U.S. Forest Service on their exact contributions to Graham County from timber sales.

Exhibit 4.2.1 in the ICE Assessment is another example of the lack of specificity of the ICE report. The title of the exhibit is "Development Considerations" with project study areas shown between Stecoah and Andrews. The exhibit shows the Appalachian Trail, High Quality Waters, Outstanding Resource Waters, Surface Water Intakes, etc. However, it fails to depict Federal or tribal land ownership. The above referenced features should be overlaid over land ownership boundaries (i.e., Limitations). It is not accurate to label the exhibit as "Development Considerations" with much of the project study areas (for both the B/C segments and the A segment) that are outside of the control and ownership of local and private interests. The exhibit might more appropriately be titled, 'Additional Development Considerations and Critical Environmental Features'.

Travel Patterns, Traffic Capacity, Safety and Accessibility

EPA's comments on these transportation issues remain unchanged from our October 14, 2008, letter on the SDFEIS. There is no new information provided in the 2006 ICE Assessment report for EPA to evaluate.

Stormwater Management

Section 4.2.3 of the ICE Assessment provides information on stormwater management, development densities, maximum dwelling units and related issues. EPA believes that this 'maximum available development' analysis did not account for such factors as floodplains and slope limitations (Page 4-9). The project study area is characterized as having very severe slope limitations and narrow valleys that often comprise the floodplains. Thus, this analysis did not account two of the most severe development limitations in the project study area.

The ICE Assessment did not address the long-term indirect and cumulative effects to stormwater runoff from more than 2.9 million cubic yards of 'excess' fill resulting from the tunnel construction. EPA believes that the ICE Assessment did not adequately address the cumulative degradation to surface waters of the U.S. from pollutants and contaminants that will leach and runoff from the proposed disposal sites. EPA also believes that the estimate of 90% reuse for cut and fills (~ 26 million cubic yards of soil and rock) appears to be overly optimistic. Actual off-site disposal needs may be much greater than is currently estimated. Indirect and cumulative impacts to surface waters from the disposal of 29 million cubic yards of rock and soil were not addressed in the report.

Natural Resource Preservation

Section 4.2.4 of the ICE discusses natural resource preservation. The ICE cites the following: "*Overall, it has been postulated that modifying animal behavior is more successful in preventing animal mortality than modifying human behaviors.*" (Forman, et al., 2003). The ICE Assessment offers different possible measures to minimize mortality and habitat fragmentation using animal passages. The report adds that measures referenced on Pages 4-9 and 4-10 can be employed by state, local and USFS planners. It

does not indicate what NCDOT and FHWA might do to address these direct, indirect and cumulative impacts to wildlife resulting from construction of a 10-mile new location expressway. This section also references numerous reports and BMPs that local planners should implement but does not address how they are to implement these measures without the existing resources to do so. The entire discussion on natural resource preservation and indirect and cumulative impacts is not project specific. Planting unpalatable plants along right-of-ways is also mentioned as a measure to minimize animal mortality. The responsibility for this potential minimization measure is not even attributed to NCDOT or FHWA. There is no reference to the direct, indirect and cumulative impacts to natural resources from invasive plant species under E.O. 13112. The new location roadway will potentially cause the spread of invasive plant species from the right-of-way to private and other public lands, including Federal lands administered by the USFS.

Project Impact-Causing Activities Checklist

Table A.3 of the ICE includes several pages of a checklist this yes/no columns and 'potential effects'. None of the potential effects are quantified. The checklist does not include the potential issue of acid rock under waste or emplacement of spoil and overburden. Acid rock is expected to be a severe environmental constraint on the disposal of waste generated (i.e., Approximately 29 million cubic yards for the dual tunnels).

Indirect and Cumulative Impacts Requiring Analysis

Table A.4 of the ICE provides another 'yes/no' checklist of the indirect and cumulative impacts requiring analysis. EPA does not agree with several of the evaluations, including "No's" for Water Quality and Air Quality in the 'Encroachment-Alteration Effects'. Please see aforementioned comments and EPA's SDFEIS review comment letter. Similarly, EPA does not agree with the evaluations of indirect effects related to induced growth, including Air Quality and Noise. EPA does not understand how the 'economic development' projected by NCDOT and FHWA from the new roadway that is diverting traffic off existing US 74 will not cause long-term impacts to the air quality and noise in the project study area. More development and more people in this rural area will obviously increase the emission of air pollutants and greater fixed and mobile sources of noise.

Determination of Unit Growth Per Mile Values

Table A.5 of the ICE Assessment provides additional population for the region based upon the different scenarios based upon the 1998 ARC report projections. EPA does not concur with the type of analysis being utilized (i.e., Regional population growth/mile). There are innumerable assumptions and arbitrary linear correlations being made in this type of analysis that are not supported by actual case studies and other reports. To provide a 2010 projection of 48.37, 2020 at 63.77 and 2030 at 81.27 for regional population growth/mile of 'new highway' is not statistically validated.

Mapping and Exhibits

While most of the maps and exhibits in the report were readable, EPA found that more detailed base maps were not utilized. The same general maps appeared in the SDFEIS. It is important to depict the topographical relief of the project study area, the existing roadway network, and the lands under Federal and tribal ownership. EPA found a more accurate and detailed base map at:
http://grahamcountytravel.com/maps/nantahala.jpg